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BACKGROUND TO INTERIM ASBESTOS MINING AND MILLING GUIDELINES

December, 1974

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Ontario

Ministry
of the
Environment

The Honourable
William G. Newman,
Minister

Everett Biggs,
Deputy Minister

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MINISTRY OF THE ENVIRONMENT

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INTERIM ASBESTOS MINING AND MILLING GUIDELINES

While there is medical evidence and opinion to conclude that a hazard to human health can result from the inhalation of asbestos fibres, there appears to be much less medical concern with the hazard from ingestion of asbestos from water.

It is to be noted that in neither case has evidence as yet been found of actual instances of health damage from asbestos in ambient air or from the levels of asbestos found in surface waters.

Medical opinion, however, suggests that it would be prudent to restrict emissions of asbestos fibres to all areas of the environment until such time as research has better defined the potential problem.

Present Status

Federally, the Environmental Protection Service, Air Pollution Control Directorate has declared asbestos a hazardous contaminant and is now preparing emission regulations for mining and milling operations. We have been advised that the emission limits ultimately tabled will be based on experience at the best controlled mills in the country. For example, the numbers will be such that fabric filters will be required on all milling sources including ore driers. Source testing is now underway in Quebec.

The Federal water control agency, has to our knowledge no asbestos program underway.

In the United States, air emission control regulations range from no visible emissions to specifying control equipment such as fabric filters or high energy scrubbers.

On the water side in the U.S. the classic case is that of Reserve Mining in Duluth. Our latest information indicates that the company will be required to refrain from dumping tailings in Lake Superior and to control air emissions with fabric filters or high energy scrubbers. It is to be noted that the latest U.S. court appeal on this case has ruled that evidence of "substantial danger" to public health is inadequate to close the plant but the company might lose its case on air and water pollution grounds.

Ministry Programs

The Air Resources Branch of the Ministry is preparing a comprehensive review of the asbestos in air situation and expect to publish a report of their work before the end of the year. Based on this report, final ambient air quality criteria and design standards will be legislated. In the meantime a tentative design standard of 5 micrograms of asbestos per cubic metre of air, 30 minute average has been set, however, due to the lack of reliable emission factors for assessment , the use of this standard is limited. The situation should be clarified upon completion of current source testing projects and the literature search now underway. Concurrently, with preparation of the criteria and standard, ambient air quality measurements are being made at representative points in the province to establish background.

The Water Resources Branch is reviewing the potential for damage to aquatic life.

Domestic water systems, industrial effluents and surface waters have been sampled to determine background. The data from domestic water systems indicates a range from less than one million to slightly over 4 million fibres per litre. The industrial effluent and surface water data range from less than one million to almost 8 million fibres per litre with two mine effluents of 35 and 65 million fibres per litre. It appears then, that average background for drinking water might be taken as 3×10^6 fibres per litre and that for surface waters and industrial effluents somewhat higher at 5×10^6 fibres per litre.

It is to be noted that normal filtration plant treatment of drinking water has been shown to reduce fibre counts by 90%.

Need for Interim Guidelines

Two asbestos mine-mill complexes will be starting up in 1975 and it is necessary to provide guidance in respect to environmental control of these operations while awaiting the preparation of definitive standards.

Lacking firm data at this time, we are therefore obliged to formulate guidelines based on the concept of containment using the best practicable technology without the use of numbered standards or objectives.

Enforcement

Under current water and air legislation it is difficult to legally enforce this type of control.

We are therefore placed in the position of relying on the Environmental Appeal Board or Public Hearings to support our requirements.

It is recommended that the requirements of the guidelines be made a part of any certificate of approval or control program issued for new or existing asbestos mine-mill operations on the understanding that appeals and hearings may be required.

Defence of those guidelines can be based on prudent medical opinion, benchmark cases in other jurisdictions, regulations of other control agencies and forthcoming federal action.

December 13, 1974.